

The former Pacific coast record at Point Reyes, Cal., 2,070 hours in 1887, was exceeded in 1915 by San Francisco Light Vessel, where 2,145 hours were observed, which was the highest figure at any station in the Service during the past year. The highest annual average for the Pacific coast, is, however, still maintained by Point Reyes, being 1,337 hours per year for 31 years, equivalent to about 15 per cent of the time.

While the records for 1915 indicate that fog was not unusually prevalent throughout the Service as a whole, there were 15 stations at each of which over 1,200 hours of fog or thick weather were observed, as follows:

TABLE 2.—Stations having over 1,200 hours of fog or thick weather, 1915.

District.	Station.	Hours.	Per cent of year.
18th.....	San Francisco Light Vessel.....	2,145	24
1st.....	Moose Peak.....	1,508	17
1st.....	Libby Islands.....	1,498	17
1st.....	Egg Rock.....	1,494	17
1st.....	Matinicus Rock.....	1,454	17
1st.....	The Cuckolds.....	1,464	17
1st.....	Whitehead.....	1,440	16
1st.....	Mount Desert.....	1,326	15
1st.....	Great Duck Island.....	1,297	15
1st.....	West Quoddy Head.....	1,288	15
12th.....	Milwaukee Pierhead.....	1,282	15
3d.....	Point Judith.....	1,265	14
2d.....	Pollock Rip Blue L. V.....	1,331	14
10th.....	Cleveland West Breakwater.....	1,224	14
2d.....	Vineyard Sound L. V.....	1,203	14

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THE PHYSICIAN AND THE WEATHER BUREAU.¹

As far back as in the time of Hippocrates physicians recognized the part which climate plays in man's health and well-being, and to-day it is most desirable that the physician should know (1) where he can secure reliable, unprejudiced climatological information; (2) what elements of climate are recorded in a reliable manner.

Weather Bureau resources.

The U. S. Weather Bureau is officially charged with the collection of a large amount of weather data and the working over of this material into climatological statements. This material is furnished by observations of temperature, atmospheric pressure, vapor pressure, precipitation, wind direction and movement, and the duration of sunshine at about 200 regular stations, most of which also have self-recording instruments for making continuous records of some or all of these elements. The locations of these regular stations are shown by the small circles on the map of figure 1. Besides these regular stations the Weather Bureau maintains (March, 1915) 4,083 special stations served by cooperative observers who observe temperature, cloudiness and rainfall, and wind direction, or perhaps only temperature or rainfall. The number of such cooperative stations in each State is shown on figure 1 by the number placed at the center of each State.

¹ A paper with this title was published in the Journal of the American Medical Association, Chicago, Jan. 1, 1916, 66:8-11, by Ford A. Carpenter. It is here abstracted for the benefit of our readers.—C. A. Jr.

The regular stations telegraph their observations twice daily to the central office at Washington, and to selected map-issuing stations, and the combined simultaneous results appear once daily on the printed maps of the daily weather issued by those stations. These weather maps should be of great practical use to the physician in routing his patients according to the weather movements the maps show; and the local bureau office can tell him of average weather conditions, as well as of altitudes along railroad routes over which he considers sending patients.

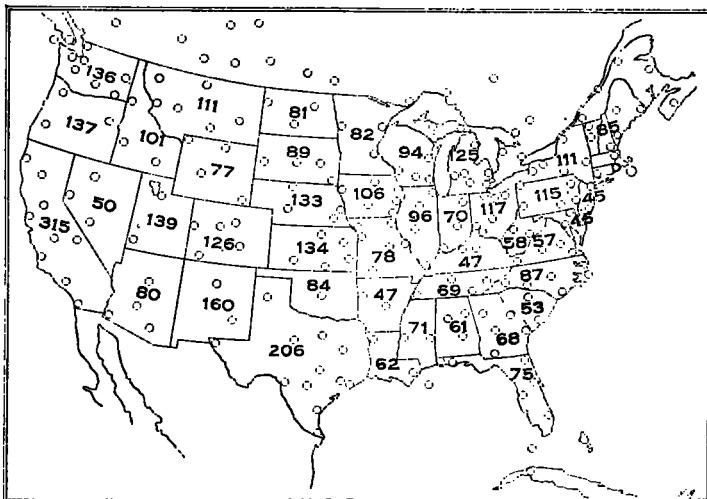


FIG. 1.—Distribution of Weather Bureau stations in the United States. Circles indicate positions of regular stations. Approximate number of cooperative stations in each State is shown by the respective figures.

Of less frequent publications the Weather Bureau issues a large number, practically all of which are at the service of the physician either in his home on request or at the local office of the Weather Bureau in his city. Every station of the service issues on the first of each month a condensed tabular summary of the preceding month's daily weather and this summary (W. B. Form 1030-met.) is mailed regularly to those requesting it. Furthermore, every climatological section center issues monthly a collection of observations made in the section (State) during the month, a report that can usually be secured upon request. The bureau has also published many special bulletins dealing with the climatology of the United States in its relation to many phases of human activity. Bulletin Q, "Climatology of the United States," deserves special mention as the most comprehensive and thorough study of the climate of the United States; it is available at each of the Weather Bureau stations and is also found in many public libraries. Since 1873 the bureau has also published the MONTHLY WEATHER REVIEW, which now contains many special contributions as well as detailed monthly discussions and statistics of each month's weather. The Weather Bureau library of more than 32,000 titles in meteorology and climatology is also for public use.

In addition to placing available meteorologic records at the disposal of the applicant, the Weather Bureau officials throughout the country will be found prompt

and courteous in their treatment of applicants for data, whether made in person or through correspondence. In many instances they will render unexpectedly valuable aid to the physician in giving him clear and concise data, perhaps not comprehended in their official routine, yet none the less accurate and satisfactory. From their training they are keen observers and their judgment on climatic matters is free from local prejudice.

Climate and health.

It was long since shown that mere pressure changes, even of such amounts as 300 millimeters mercury in 24 hours, do not have injurious effects on sick people; daily experience shows that the range in pressure from day to day is not in excess of that experienced when riding from the ground floor to the top of high office buildings, or perhaps a tenth of an inch of mercury (2.5 mm.) in the barometric column. The weather that accompanies changes in pressure is found to have more important effects upon the human organism.²

Again, sunshine and ventilation (natural air movement or windiness) are found to be most important elements of climate in its relation to health, and the data for studying them are furnished by the Weather Bureau.

PROBLEMS FOR THE CLIMATOLOGIST.

Various problems in applying Weather Bureau skill and resources arise—e. g., proper selection of sanatorium sites; "sensible" temperatures (now estimated by means of wet-bulb thermometer observations) as related to infant mortality; acute infectious diseases and sunlight (as mapped on the bureau's monthly sunshine charts). Here the Weather Bureau can only supply observational material.

On the other hand, the bureau may and does properly take up on its own behalf very intensive studies of the climatic details of quite restricted areas—e. g., special stations established in southern California; also the study of the minute climate of 16,000 acres of the old Spanish grant Los Palos Verdes, between Redondo Beach and San Pedro near Los Angeles, Cal., by means of six complete meteorological stations; or the detailed studies into local conditions in the frost-free belts (thermal belts) of North

Carolina by means of a large number of recording instruments exposed in the orchards of the region.

A California physician has prepared the following statement of the ways in which a physician may properly claim the assistance of the Weather Bureau:

I believe the field has been but little explored. We physicians are guilty of many things; among them is guessing. If the U. S. Weather Bureau will prove some of this guessing true or false, it will add one more good thing to its past fine record. I think that the time is near at hand when our health officers will be required to be specialists. They will then have the time, the special training, and other equipment to go into the subject in conjunction with your bureau and give us some scientific findings. I think the State should be plotted, showing the real atmospheric conditions of all localities and showing the influence on the functions of the body. Whether the old east wind of Boston is accountable for all of the vile things charged to it or not, nobody really knows, but it should be investigated. That altitude, temperature, humidity, prevailing and unusual winds have much effect on many individuals, there is no doubt. The nasal and pulmonary mucous membranes are constantly affected by atmospheric conditions. Locally I have observed that semichronic bronchial coughs that do not yield readily in the city will often clear up in a few hours in the mountains and foothills east of the city. A congested nasal mucous membrane that will kick up a rumpus much of the time in the mountains will disappear promptly at a lower elevation near the coast. Some patients with bronchial asthma that is incurable in the business section of the city will be very comfortable a short distance out of town and in a higher, drier location. Two hot dry days last month have been charged up with some rather serious pulmonary conditions in aged people. These are a few instances of hundreds coming to my mind that I have observed in my years of practice. The subject should be worked out by a union of effort of the Weather Bureau and the medical profession.

ALTO-CUMULUS WITH VIRGULUS.

By C. FITZHUGH TALMAN, Professor of Meteorology.

[Library, Weather Bureau, Washington, Feb. 26, 1916.]

The type of cloud described by Mr. George Reeder in the MONTHLY WEATHER REVIEW for December, 1915, page 614, under the name "Aurelia alto-cumulus," has frequently been described before—e. g., by C. Ritter, "Essai d'une théorie provisoire des hydrométéores" (Ann. Soc. Mét. de France, 1880, 28: 117), and by J. Vincent, "Atlas des nuages," 1907, p. 17. Both authors present drawings of this cloud, and Vincent agrees with Ritter in calling it "alto-cumulus with virgulus," the last word being arbitrarily formed from the Latin *virga*, a wand or switch. Lastly, there is a splendid photograph of this form of cloud in Loisel's "Atlas des nuages," Paris, 1911, figure 13. Loisel also uses Ritter's nomenclature.

² Hann (Ward Tr.), Handbook of Climatology.
Browning, C. C., Trans. Amer. clim. assoc., 1913, 29.